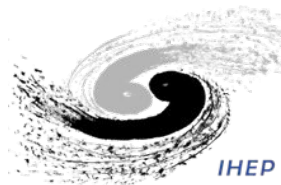


WG1 VBF meeting: Introduction

C. Bertella, P. Govoni, A. Kalberg, B. Jäger
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**University of
Zurich**^{UZH}

EBERHARD KARLS
**UNIVERSITÄT
TÜBINGEN**



Introduction

- New organization of the WG1 XS subgroups: focus group on VBF
- new egroup: lhc-higgs-vbf: please subscribe!
- A twiki page is under construction:
<https://twiki.cern.ch/twiki/bin/view/LHCPhysics/LHCHXSWGVBFB>
- Next general assembly on July: <https://indico.cern.ch/event/595100/>
 - Provide an update on the theory and experimental status
- Define the roadmap for the VBF group
 - Theory inputs needed by the LHC analysis
 - Focus on major studies to be released in short/middle-long time scale (up to 1 year)
 - We tried to gather a list of topics of interest, to collect interest of people
 - Additional suggestions are welcome!

Topics for discussion

- Higher-order corrections:
 - While NNLO QCD and NLO EWK exist at fixed order, no prescriptions are available on how to apply them to events generated after parton shower and underlying event simulation.
 - Prescription on how to reweight existing simulations to NNLO QCD and NLO EWK without affecting the simulation precision could be subject of a publication
- Jet multiplicities merging and parton shower accuracy:
 - Comparisons between different merged samples and between different showering options
 - Possible new recommendations on the central value and on the uncertainties to be adopted in analyses
- CJV systematics:
 - Estimation based on ST gives an overestimation of the uncertainties which has then a high impact on the final result
 - Possible redefinition of the uncertainty and updated recommendations for more sophisticated analysis based on a multi-variate discriminant

Topics for discussion

- Higgs spin in VBF
 - The Higgs spin can be constrained by looking at VBF jets as well
 - Do we have all the needed tools available to do it, and to combine the results with other spin studies in ATLAS and CMS?
- Simplified Template Cross Sections uncertainties:
 - LHC analyses will provide results using categories defined by the Simplified Template Cross Sections method, mainly Stage 0 and Stage 1
 - Estimation of the systematics uncertainties in each bin is needed
- High Higgs p_T :
 - First measurements of the high p_T Higgs spectrum (above 0.5 TeV) are being published
 - Dedicated calculations to account for finite quark mass effects at higher orders in QCD and with additional jets are needed to be compared to data

Discussion